

INVENTOR: Blanchard, Clarence E.

S/N: 09/927,719

In the Claims

~~1-28.~~ (Previously Cancelled)

29. (Previously Amended) A jet-powered boat comprising a hull having a stern and a bottom, an outboard water jet propulsion system mounted to said hull, wherein said outboard water jet propulsion system comprises:

an engine;

an exhaust housing pivotably mounted to said hull and supporting said engine, said exhaust housing having an exhaust gas passage; a thrust bracket arranged between said water jet propulsion system and said stern of said hull and comprising side walls arranged to receive the exhaust housing therein and prevent lateral rotation of the exhaust housing when the exhaust housing is situated therein;

an axial-flow pump unit attached to said exhaust housing, said axial-flow pump unit comprising a water duct, an impeller mounted to a generally horizontal impeller shaft and rotatable inside said water duct, and an exhaust gas passage in fluid communication with said exhaust gas passage of said exhaust housing; and

a drive train for coupling said engine to said impeller shaft for driving said impeller shaft to rotate during engine operation.

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30. (Previously Added) The boat as recited in claim 29, wherein said thrust bracket further comprises a flat mounting plate that lies flat against said stern, said side thrust walls being generally perpendicular to said mounting plate.

62 31. (Previously Added) The boat as recited in claim 29, wherein said drive train comprises a generally vertical drive shaft coupled to said engine and gears for converting rotation of said generally vertical drive shaft into rotation of said generally horizontal impeller shaft.

32. (Previously Added) The boat as recited in claim 29, further comprising a tilt pivot tube, wherein said exhaust housing comprises a pair of mounting brackets adapted for coupling with said tilt pivot tube.

33. (Previously Added) The boat as recited in claim 29, wherein said water duct has a generally horizontal inlet at a depth not lower than a lowest point of said hull bottom.

34. (Previously Added) A jet-powered boat comprising a hull having a stern and a bottom, and an outboard water jet propulsion system mounted to said hull, wherein said outboard water jet propulsion system comprises:

an engine;

a vertical drive shaft powered by said engine;

a horizontal impeller shaft with an impeller mounted thereon;

a gear assembly for coupling said horizontal impeller shaft to said vertical drive shaft;

an inlet housing comprising a planar top face having an exhaust gas inlet and an opening penetrated by said vertical drive shaft, a chamber for housing said gear assembly, a rear face having an exhaust gas outlet, a passageway connecting said exhaust gas inlet with said exhaust gas outlet, and a water tunnel having a water inlet formed in a bottom of said inlet housing and a water outlet formed in said rear face of said inlet housing,

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said water tunnel and said chamber being separated by a wall that is penetrated by said horizontal impeller shaft; and

an exhaust housing pivotably mounted to said hull and supporting said engine, said exhaust housing comprising a top face and a planar bottom face, said bottom face of said exhaust housing sitting on top of said top face of said inlet housing, a vertical passage for said vertical drive shaft, an exhaust gas passage that runs from an opening in said top face of said exhaust housing to an opening in said bottom face of said exhaust housing, said opening in said bottom face of said exhaust housing overlying said exhaust gas inlet in said inlet housing.

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35. (Previously Added) The boat as recited in claim 34, wherein said outboard water jet propulsion system further comprises an outlet housing attached to said rear face of said inlet housing, said outlet housing comprising a duct outlet in flow communication with said water tunnel and an exhaust gas passage in fluid communication with said exhaust gas passage of said inlet housing.

36. (Previously Added) The boat as recited in claim 35, wherein said outlet housing comprises a stator hub and a plurality of stator vanes, said impeller shaft being rotatably supported by a bearing housed within said stator hub.

37. (Previously Added) The boat as recited in claim 34, wherein said gear assembly is fastened to said inlet housing.

38. (Previously Added) The boat as recited in claim 34, further comprising a thrust bracket arranged between said water jet propulsion system and said stern of said hull, said thrust bracket comprising a flat mounting plate that lies flat against said stern and a pair of side thrust walls that are generally perpendicular to said mounting plate.

39. (Previously Added) The boat as recited in claim 38, wherein said exhaust housing comprises a pair of recesses on opposing sides, said side thrust walls of said thrust bracket fitting in said respective recesses in said exhaust housing.

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40. (Previously Added) The boat as recited in claim 34, further comprising a tilt pivot tube, wherein said exhaust housing comprises a pair of mounting brackets adapted for coupling with said tilt pivot tube, whereby said water jet propulsion system is pivotable relative to said hull about an axis of said tilt pivot tube.

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amended

41. (Previously Added) The boat as recited in claim 36, wherein said outlet housing has a engine coolant opening located opposite and radially outward of said impeller, and said exhaust housing comprises a vertical water passage for providing cooling water to said engine, said vertical water passage having an inlet overlying said engine coolant opening in said outlet housing.

42. (Previously Added) The boat as recited in claim 34, further comprising a bearing assembly rotatably supporting said vertical drive shaft, wherein said bearing assembly is seated in said opening of and fastened to said inlet housing.

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43. (Currently Amended) A jet-powered boat comprising a hull having a stern and a bottom, an outboard water jet propulsion system pivotably mounted to said hull, and a thrust bracket arranged between said outboard water jet propulsion system and said stern of said hull, wherein said thrust bracket comprises a flat mounting plate that lies flat against said stern and a pair of side thrust walls extending generally parallel to each other and generally perpendicular to said mounting plate, said side thrust walls constructed to engage flanking a pair of respective recesses~~adjoining portions~~ of said outboard water jet propulsion system and arranged to prevent lateral displacement of said outboard water jet propulsion system due to side thrust in either direction.

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44. (Previously Added) The boat as recited in claim 43, further comprising a tilt pivot tube, wherein said water jet propulsion system comprises a pair of mounting brackets adapted for coupling with said tilt pivot tube, whereby said water jet propulsion system is pivotable relative to said hull about an axis of said tilt pivot tube.

45. (Previously Added) An outboard water jet propulsion system comprising:
an engine;

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an impeller;

a drive train for coupling said impeller to said engine;

an inlet housing comprising a top face having an exhaust gas inlet and an opening penetrated by a first portion of said drive train, a chamber for housing a second portion of said drive train, a rear face having an exhaust gas outlet, a passageway connecting said exhaust gas inlet with said exhaust gas outlet, and a water tunnel having a water inlet formed in a bottom of said inlet housing and a water outlet formed in said rear face of said inlet housing, said water tunnel and said chamber being separated by a wall that is penetrated by a third portion of said drive train;

an outlet housing for housing said impeller and a fourth portion of said drive train, said outlet housing comprising a duct having a water inlet in flow communication with said water tunnel and a water discharge outlet; and

an exhaust housing comprising a top face supporting said engine and a bottom face that sits on top of said top face of said inlet housing, a vertical passage for a fifth portion of said drive train, and an exhaust gas passage that runs from an opening in said top face of said exhaust housing to an opening in said bottom face of said exhaust housing, said opening in said bottom face of said exhaust housing overlying said exhaust gas inlet in said inlet housing.

46. (Previously Added) The system as recited in claim 45, wherein said outlet housing comprises an exhaust gas inlet in flow communication with said exhaust gas outlet of said inlet housing.

47. (Previously Added) The system as recited in claim 45, wherein said bottom face of said exhaust housing and said top face of said inlet housing are each generally planar.

48. (Previously Added) The system as recited in claim 45, further comprising a plurality of fasteners whereby said inlet housing is fastened to said exhaust housing.